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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,541	12/28/2005	Francesco Pessolano	NL030781	3960

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EXAMINER	
DUNN, DARRIN D	

ART UNIT	PAPER NUMBER
2121	

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09/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,541	PESSOLANO ET AL.	
	Examiner	Art Unit	
	DARRIN DUNN	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2008*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7,8,10,11 and 17-23* is/are pending in the application.

4a) Of the above claim(s) *2-6,9 and 12-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7,8,10,11, and 17-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the communication filed 09/05/2008.

2. Claims 1,7-8, 10-11, and 17-23 are pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 7-8, 10-11, 17-19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teller et al. (USPN 2002/0019586) in view over Knispel et al. (USPN 4883067), and in further view of Shafer et al. (USPN 5386247)

6. As per claim 1, Teller et al. teaches a method of controlling an electronic device, comprising the steps of:

detecting brainwaves of a user ([TABLE 1 – EEG], [0048], [0086] e.g., EEG, EMG, and EOG sensor data is utilized to provide indicators to the user of his or her sleep patterns)

Teller does not teach in response to detecting theta waves from the user at least one of reducing a volume of sound output, reducing a quality of sound output, reducing a size of an image output, and reducing a quality of an image output (e.g., reduction many be interpreted as reducing a value from 100% to 0%, i.e., turning off a device. In the instant case, reduction has been applied as not turning a device off but rather providing a residual volume and/or image output)

Shafer teaches a sleep timer wherein the volume is gradually turned down (e.g., reduction of volume) in addition to gradually increasing the image border (e.g., reduction in image quality) corresponding to a sleep state of a user ([COL 1 lines 25-60])

Knispel et al. teaches the brainwaves associated with a sleep state (e.g., sleep onset) comprising theta waves (e.g., pre-sleep), delta (e.g., deep sleep) ([COL 1 lines 24-39])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Teller et al. to measure the types of brainwaves associated with a sleep stage. First, Teller teaches that "sleep onset" is monitored using EEG, EMG, or EOG (e.g., brainwaves). Since sleep does not occur instantaneously, but rather may be viewed in stages (e.g., sleep onset), one of ordinary skill in the art would recognize alpha, theta, and delta waves correspond to particular sleep stages (e.g., sleep onset) Knispel et al. teaches the brainwaves associated with sleep onset (e.g., theta and delta), and therefore it would have been obvious to monitor these brainwaves accurately detect sleep onset using the EEG as taught by Teller.

However, Teller et al , as modified by Knispel et al. , teaches that in response to detecting the various brainwaves would in effect turn off a television. However, Teller as modified, does not teach reducing a level of sound or image quality in response to detecting a theta wave (e.g., pre-

sleep) Shafer teaches that both sound and image quality are reduced specifically so that a dozing user is not disturbed by a sudden change in light or sound level ([COL 2 lines 5-14]). In effect, one of ordinary skill in the art would recognize that a user in a pre-sleep stage is more susceptible to both sound and image disturbances during a transition from the pre-sleep to deep sleep stage. Shafer et al. solves the pertinent problem of gradually reducing volume and/or image quality so to accommodate a transition from a pre-sleep to a deep sleep state. It is well known that television volume fluctuates (e.g., commercial breaks), which in effect would disrupt the pre-sleep stage. To solve this problem, Shafer et al. provides motivation to gradually turn down the volume and/or image quality during the pre-sleep (e.g., theta) stage. Therefore, in view of Teller, as modified, it would have been obvious to reduce the sound and/or image quality during a pre-sleep stage (e.g., theta) by measuring theta waves using the EEG as taught by Teller et al. to control an output level of the television.

in response to detecting waves or a REM state, switching the electronic device to one of off and a hibernation mode of reduced power consumption ([0114] e.g., turning television off. Teller, as modified, teaches that the television is turned off corresponding to a deep sleep (e.g., delta state. Knispel teaches delta waves correspond to this state. In effect, based on the aforementioned reasoning, it would have been obvious to monitor a delta wave to determine a user is asleep and subsequently turn off the television)

7. As per claim 7, Teller et al., as modified, teaches a computer program enabling a programmable device to carry out a method as in claimed 1, wherein the computer program is stored on a computer readable medium, which when executed by a computer system, carries out the steps claimed on claim 1 ([ABSTRACT], [FIG 1-35], [0129])

8. As per claim 8, Teller et al., as modified, teaches an electronic device, comprising:

a receiver -50 ([FIG 1]) for receiving, from a detector –sensor device (-0044]), a detection signal indicative of a state of a user ([TABLE 1 -EEG data]); and

a control unit -30 ([FIG 1], [0056]) which:

is able to use the receiver to receive the detection signal from the detector ([0050],

determine, whether based on the received detection signal, the user is asleep (supra claim 1, delta waves) , probably asleep (supra claim 1, theta waves), or awake ([0086] e.g., wake time) ;

switch the electronic device to a mode of reduced power consumption in response to determining that the user is asleep ([0114] e.g., turning television power from an 'on mode' to an 'off mode' effectively reduces the power from on to off. In effect, power consumption is reduced);

in response to determining that the user is probably asleep, controlling the electronic device to at least one of reduce a volume of sound output by the electronic device, reduce a quality of sound output by the electronic device, reduce a size of an image output by the electronic device, reduce a quality of an image output by the electronic device (supra claim 1, wherein based on detecting a pre-sleep stage, it is obvious to reduce the quality of output via turning the power off. Please note that the degree of reduction is not specified)

9. As per claim 10, Teller et al., as modified, teaches the electronic device as claimed in claim 8, further including a motion detector ([0073], [0080] e.g., body movement or motion)

10. As per claim 11, Teller et al, as modified, teaches the electronic device as claim in claim 8, further including:

an output means which generates at least one of an audio signal and a display signal ([0114] e.g., television)

11. As per claim 17, Teller et al, as modified, teaches an electronic device including a processor programmed to perform the steps in claim 1 ([FIG 13], [0046], [0096], [0113-114])

12. As per claim 18, Teller et al, as modified, teaches the electronic device as claimed in claim 8, further including:

A brainwave detector which measures brainwaves of the user and generates detection signal based on the detected brainwaves ([TABLE 1- EEG], [TABLE 2], [0046] e.g., detection signal, i.e., output, utilized in part for detecting sleep onset, which in turn is utilized to turn off an electronic device ([0114])

13. As per claim 19, Teller et al., as modified, teaches an electronic device comprising:

a brainwave detector which measures brainwaves of a user of the electronic device and generates a detection signal based on the detected brainwaves ([TABLE 1-2], [0046], [0050] e.g., supra claim 1, wherein multiple brainwaves are measures via sensor device, incorporated in the form of an attachable armband)

a receiver for receiving the detection signal from the brainwave detector ([0049] e.g., signals representative of parameters used by the microprocessor), and

a control unit – [0096- armband] which:

receives the detection signal from the receiver ([0106])

determines whether the user is probably asleep by identifying from the detection signal a first brainwave pattern (e.g., theta waves) that indicative of at least one of a relaxed with eyes closed, sleep, already sleeping (delta waves), or in a sleep transition

(theta waves) (supra claim 1, wherein theta and delta waves are detected via EEG and processed to determine a sleep stage of a user. In turn, based on the sleep stage, an electronic device is turned off)

determines whether the user is asleep by identifying a second brainwave pattern indicative of the user being in a deep sleep (e.g., supra claim 1, wherein delta waves (waves less than 4 hertz corresponding to deep-sleep stage) are indicative of a particular sleep stage) or REM sleep.

in response to determining that the user is probably asleep, controls the electronic device to at least one of reduce a volume of sound output by the electronic device, reduce a quality of sound output by the electronic device, reduce a size of an image output by the electronic device, and reduce a quality of an image output by the electronic device (supra claim 1 discussion) and

switch the electronic device to a mode of reduced power consumption in response to determining that the user is asleep (e.g., turning television off is a 100% reduction on power consumption)

14. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teller et al. (USPN 2002/0019586) in view over Knispel et al. (USPN 4883067), and in view over Shafer et al. (USPN 5386247), and in further view of Sylliassen et al. (USPN 20020135474)

15. As per claim 20, Teller et al., as modified, teaches the electronic device as claimed in claim 19, further including:

a motion detector which outputs a second detection signal based on detected motion ([0110] – accelerometer); and,

wherein the control unit determines whether the user is probably asleep based on whether the brainwave detection signal is indicative of theta or alpha waves (Teller et al, as modified, in combination with Knispel et al., teaches the detection of theta (e.g., pre-sleep) and alpha (e.g., state of relaxation but not asleep, i.e., awake) and determines whether the user is asleep based on both the brainwave detection signal (supra claim 1, wherein based on the detected wave, a television is turned off)

However, Teller et al., as modified, does not teach employing the motion detector (e.g., accelerometer) as part of the determination the user is asleep. Sylliassen et al. teaches sensing a motion level to determine whether a user is asleep ([ABSTRACT], [FIG 3])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to detect movement as being indicative of a sleep state. Both Teller et al. and Sylliassen et al. solve the pertinent problem of determining the sleep onset of a user. Teller et al. provides motivation to sense brainwaves to detect sleep onset. Sylliassen et al. uses motion detection as indicative of sleep onset. Therefore, it would have been obvious to measure brainwaves and motion to provide indicators of a sleep state.

16. As per claim 21, Teller et al, as modified, teaches the electronic device as claimed in claim 19, wherein the control unit determines whether the user is probably asleep based on whether the brainwave detection signal is indicative of theta or alpha waves (supra claim 1, wherein based on the detection of theta waves (e.g., pre-sleep), is indicative of being probably asleep) and determined whether the user is asleep based on the brainwave detection signal being

indicative of delta waves or REM sleep (supra claim 1, wherein it is interpreted that a sleep transition comprises several stages. Teller et al. teaches that an EEG measures brainwaves and in response turning off a device. Knispel teaches that brainwave patterns indicative of various sleep stages. Therefore, Teller in combination with Knispel provides a means to detect several sleep stages, and in response will turn off an electronic device based on the particular sleep stage)

17. As per claim 22, Teller et al., as modified, teaches the electronic device as claimed in claim 8, further including a pressure sensor for generating the detection signal ([0044] e.g., blood pressure data is used to derive sleep onset/wake)

18. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teller et al. (USPN 2002/0019586) in view over Shafer et al. (USPN 5386247), and in further view of Sylliassen (USPN 20020135474)

19. As per claim 23, Teller et al., as modified, teaches the method in claim 1, further including:

reducing a volume of sound output by the electronic device, reducing a quality of sound output by the electronic device (supra claim 1 discussion)

However, Teller et al, as modified, does not teach determining whether movement has been determined for a predetermined period of time. Sylliassen et al. turning off an electronic device when movement has not been sensed for a predetermined period of time. ([FIG 4A])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to detect the motion of a user for a predetermined period of time, and in response to detecting no movement for a period of time, reducing the volume and/or image quality of the

television. In particular, Teller et al., as modified, teaches measuring signals indicative of a state of a user (motion being a measured state via an accelerometer) and in turn reducing the output of a device (e.g., gradually reducing the volume and/or image quality to not disturb the user). The reduction of volume and/or image quality is implemented, as taught by Shafer et al., to limit a user being disturbed during a sleep stage. Teller et al. teaches detecting sleep onset (e.g., gradual transitions). Shafer teaches gradually reducing the sound and/or image quality corresponding to a sleep state so as to not disturb a user (e.g., solving the pertinent problem of how a gradual reduction of volume is conducive to falling asleep). Sylliassen et al. teaches that motion is indicative of a sleeping user. In effect, the references, as combined, provide motivation to detect a sleep state via movement and gradually reduce the volume and/or image output to not disturb the user (e.g., sudden volume changes are likely to disturb a user during a pre-sleep state and/or a deep sleep state).

Response to Amendment

21. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

Applicant's arguments with respect to claims 1,8, 19, 22, and 23 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN DUNN whose telephone number is (571)270-1645. The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD
09/22/2008

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Art Unit 2121